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REMARKS

The application has been reviewed in light of the Office Action dated September 13, 2006.

Claims 1-6 were pending.   By this Amendment, claims 7 and 8 have been added.   Accordingly,

claims 1-8 are now pending, with claims 1 and 4 being in independent form.

The title of the application was objected to as purportedly not descriptive.

By this Amendment, the title has been amended to be indicative of one or more features of

the subject matter of the present application.

Withdrawal of the objection to the title is respectfully requested.

Claims 1-6 were rejected under 35 U.S.C. § 102(e) as purportedly anticipated by Schwartz et

al. (US2003/0219166A1).

Applicant has carefully considered the Examiner's comments and the cited art, and

respectfully submits that independent claims 1 and 4 are patentable over the cited art, for at least the

following reasons.

This application relates to an image processing approach which utilizes wavelet transforms.

For example, in image processing based on the JPEG2000 format, wavelet coefficients are obtained

through two-dimensional discrete wavelet transformation and are decomposed into a plurality of bit-

planes. The size of coded data from subsequent entropy coding of the wavelet coefficients can be

adjusted, by discarding the least significant bit-plane data in a unit of subband. However, it is not

easy to adjust the data to a desired size and conventional techniques apply an iterative approach.

That is, the least significant bit-plane data of the wavelet coefficients are discarded, the remaining

data of the wavelet coefficients are entropy coded, the size of the resulting coded data is checked,

and the process is repeated until the resulting coded data has the desired size. In general, such

approaches which perform entropy coding repeatedly is undesirable, since they require a large amount of time to reduce the amount of the coded data to the desired size.

Applicant devised an improved approach for obtaining coded data of the desired size, wherein coded data from execution of the entropy coding is stored, and the stored coded data is reduced by sequentially discarding a portion of the coded data in a least significant order based on the size of the coded data portion corresponding to each of the bit-planes. Each of independent claims 1 and 4 addresses these features, as well as additional features. Such an approach does not require execution of entropy coding for each adjustment of the coded data.

Schwartz, as understood by Applicant, proposes an approach for specifying quantization in image processing which is based on human visual capabilities. In the method proposed by Schwartz, scalar quantization is specified for application to one or more bit planes of luminance information in image data using a human visual system (HVS), and bit planes of the luminance information in the image data are weighted and quantized based on the specified scalar quantization.

As discussed in Schwartz, [0082] through [0085], which is cited in the Office Action, color pixel data is stored as tiles in memory 501, each tile is subjected to color conversion, wavelet transform is applied to the color converted data, entropy coding is applied as compression to the transformed data, and the coded data is stored in memory 505. Thus, as noted in the Office Action, coded data is stored in memory in the system proposed in Schwartz.

However, Schwartz does not teach or suggest that the coded data stored in memory is reduced by sequentially discarding a portion of the coded data in a least significant order based on the size of the coded data portion corresponding to each of the bit-planes.

Schwartz, [0181], which is cited in the Office Action, states as follows:

[0181] One of the coefficient values may be modified to be either a predetermined closeness to another coefficient value. The closeness may be determined by some threshold. The threshold may be user set or adaptive based on some criteria. The threshold could be different based on the subband and, perhaps, on the persistance of the particular value (number of frames that this coefficient is close). In one embodiment, the coefficient value is set equal to the other coefficient value. In alternative embodiments, the coefficient is set to be within the quantization bin size of the other coefficient value or twice the quantization bin size.

Thus, Schwartz proposes adjusting coefficient values to be more similar (according to a specified threshold) to another coefficient value, in order to establish persistence of the particular value across multiple frames. Schwartz, [0181], clear does not teach or suggest that the coded data stored in memory is reduced by sequentially discarding a portion of the coded data in a least significant order based on the size of the coded data portion corresponding to each of the bit-planes.

Schwartz, [0080], is also cited in the Office Action, but merely proposes that a tiling scheme can be appropriately selected for to improve compression.

Schwartz, [0170], which is cited in the Office Action, states as follows:

[0170] Note that if there are subsequent tile-parts that depend on the data in the portion of the codestream that is being edited, these tile-parts may become useless in the codestream. An indication of this useless data may be noted to the decoder by one of several methods. These methods involve inserting or modifying information in the codestream to indicate the presence and/or location of the useless data. In one embodiment, the application uses a status buffer to indicate that the data in tile-parts subsequent to an edited tile-part may be useless. The status buffer may be in workspace memory and describes dependencies between packets. If an earlier packet is altered, the subsequent packets cannot be decoded as is. These subsequent packets must be edited accordingly or eliminated. In another embodiment, such an indication may be made by zeroing out the data section of those tile-parts and/or creating a PPT marker segment that denotes no data.

Thus, Schwartz proposes that useless data or tile-parts in a tile can be appropriately flagged via any of a number of methods.

However, contrary to the contention in the Office Action, Schwartz simply does not teach or

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suggest that coded data is reduced by sequentially discarding a portion of the coded data in a least significant order based on the size of the coded data portion corresponding to each of the bit-planes, as provided by the subject matter of claim 1 of the present application.

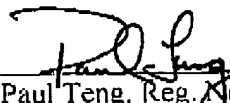Independent claim 4 is patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1 and 4, and the claims depending therefrom, are patentable over the cited art.

In view of the remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

Paul Teng, Reg. No. 40,837
Attorney for Applicant
Cooper & Dunham LLP
Tel.: (212) 278-0400